

ABSTRACT

The present invention provides a transparent optical film that has excellent optical characteristics for realizing the uniform retardation distribution and restraining rainbow-colored irregularities. The optical film, which is obtained by laminating a birefringent layer (a) on a transparent film (b), satisfies all the following formulae (I), (II) and (III).

$$\Delta n(a) > \Delta n(b) \times 10 \quad (I)$$

$$1 < (n_x - n_z) / (n_x - n_y) \quad (II)$$

$$0.0005 \leq \Delta n(a) \leq 0.5 \quad (III)$$

In the above formulae (I), (II) and (III), $\Delta n(a)$ and $\Delta n(b)$ denote respectively birefringent indexes of the birefringent layer (a) and the transparent film (b). The signs of n_x , n_y and n_z indicate refractive indexes in an X-axis direction, a Y-axis direction and a Z-axis direction in the birefringent layer (a), respectively. The X-axis corresponds to an axial direction exhibiting a maximum refractive index within a plane of the birefringent layer (a), the Y-axis corresponds to an axial direction perpendicular to the X-axis within the plane, and the Z-axis corresponds to a thickness direction perpendicular to the X-axis and the Y-axis.